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11

Statutory and Other Applicable  
Regulations

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## **11. STATUTORY AND OTHER APPLICABLE REQUIREMENTS**

The U.S. Department of Energy (DOE) has conducted site characterization activities in accordance with requirements of applicable laws and regulations and a range of permits and approvals that regulate the various aspects of the activities. The Department has successfully met environmental protection standards for its site characterization activities by developing a comprehensive approach to environmental compliance that ensures adherence to Federal and state requirements. It has implemented specific environmental compliance programs for pollution prevention, protection of cultural resources, and protection of threatened or endangered species. In its future actions involving Yucca Mountain, DOE will continue to comply with applicable Federal and state environmental requirements and with the conditions of the permits and approvals that might be required to conduct its activities.

This chapter identifies major requirements that could be applicable to the Proposed Action, which is to construct, operate and monitor, and eventually close a geologic repository for the disposal of spent nuclear fuel and high-level radioactive waste at Yucca Mountain. Section 11.1 lists statutory and regulatory provisions that set requirements potentially applicable to siting a monitored geologic repository. Section 11.2 summarizes statutes and regulations that set environmental protection requirements that could apply to a repository at Yucca Mountain. Section 11.3 contains a list of DOE Orders that could apply to activities related to the proposed repository. Section 11.4 contains a list of potentially applicable requirements compiled by the DOE Office of Civilian Radioactive Waste Management.

Table 11-1 lists potential new permits, licenses, and approvals that DOE could need for construction, operation, and closure of the Yucca Mountain Repository.

### **11.1 Statutes and Regulations Establishing or Affecting Authority To Propose, License, and Develop a Monitored Geologic Repository**

#### **Nuclear Waste Policy Act of 1982, as amended (42 USC 10101-10270)**

The Nuclear Waste Policy Act, as amended in 1987 (called the NWPA), directs DOE to characterize and evaluate the suitability of only Yucca Mountain in southern Nevada as a potential site for a geologic repository for the disposal of spent nuclear fuel and high-level radioactive waste. After considering the suitability of the site and other information, the Secretary may then recommend approval of the site to the President. Further, the NWPA directs that this Site Recommendation would constitute a major Federal action and that an EIS must accompany a recommendation that the President approve the site for a repository. In accordance with the NWPA, the Secretary of Energy must submit an application for construction authorization to the U.S. Nuclear Regulatory Commission within 90 days of the effective date of a Presidential designation of Yucca Mountain as a site for a repository.

The NWPA directs the U.S. Environmental Protection Agency to promulgate generally applicable standards for protection of the environment from offsite releases from radioactive material in repositories. In addition, it requires the Nuclear Regulatory Commission to consider and approve or disapprove an application (if DOE submits one) for authorization to construct a repository for these materials based on Commission standards, which are to be consistent with the Environmental Protection Agency standards. In 1983, the Nuclear Regulatory Commission promulgated licensing requirements (10 CFR Part 60) that contain criteria governing the issuance of a construction authorization and license for a geologic repository (see Table 11-1, item 1). These requirements would allow DOE to develop a repository for the receipt and disposal of spent nuclear fuel and high-level radioactive waste and would establish conditions under which DOE could receive and possess source, special nuclear, and byproduct

**Table 11-1.** Permits, licenses, and approvals needed for a monitored geologic repository.

Activity	Regulatory action	Statute or regulation	Agency(ies)
1. Repository construction, operation, and closure	Construction authorization, license to operate and monitor, and license for closure	10 CFR <sup>a</sup> Part 60	Nuclear Regulatory Commission
2. Repository construction, operation, and closure	Authorization to Withdraw Land From Public Use	43 CFR Part 2300	Congress, Bureau of Land Management
3. Air emissions	Approvals for New Sources of Toxic Air Pollutants	40 CFR Parts 61 and 63 NAC 445B.287 <i>et seq.</i> <sup>b</sup>	Environmental Protection Agency Nevada Division of Environmental Protection
4. Air emissions	Air Quality Operating Permit	NAC 445B.287 <i>et seq.</i>	Nevada Division of Environmental Protection
5. Air emissions	National Emission Standards for Hazardous Air Pollutants Subpart H (Radionuclides)	40 CFR Part 61  10 CFR Part 20	Environmental Protection Agency  Nuclear Regulatory Commission
	National Primary and Secondary Ambient Air Quality Standards	40 CFR Part 50	Environmental Protection Agency
6. Certification of facilities	Certification of Air and Water Pollution Control Facilities	40 CFR Part 20	Environmental Protection Agency
7. Drinking water	Water System Operating Permit	NAC Section 445A	Nevada Health Division
8. Effluents	Stormwater Discharge	40 CFR Part 122  NAC 445.070 <i>et seq.</i>	Environmental Protection Agency Nevada Division of Water Planning
9. Effluents	National Pollutant Discharge Elimination System	40 CFR Part 122	Environmental Protection Agency
	State Water Pollution Control Permit	NAC Section 445A	Nevada Division of Water Planning, Nevada Division of Environmental Protection
10. Excavation; facility construction	Cultural Resource Review Clearance, Section 106 Agreement	36 CFR Part 800	Advisory Council on Historic Preservation, State Historic Preservation Officer
11. Excavation; facility construction	Permit to Proceed (Objects of Antiquity)	36 CFR Part 296 43 CFR Parts 3 and 7	Department of the Interior
12. Excavation; facility construction	Permit for Excavation or Removal of Archaeological Resources	16 USC 470 <i>et seq.</i>	Department of the Interior, affected Native American Tribes
13. Facility construction	Free-Use Permit	43 CFR Part 3600	Bureau of Land Management, Forest Service
14. Facility construction	Permit for the discharge of dredged or fill materials to Waters of the United States	Clean Water Act, Section 404	U.S. Army Corps of Engineers
15. Facility construction	Right-of-way reservation	43 CFR 2800	Bureau of Land Management
16. Facility construction and operation	Endangered Species Consultation	50 CFR 402.6	Fish and Wildlife Service
17. Materials storage	Hazardous Materials Storage Permit	NAC Sections 459 and 477	Nevada State Fire Marshal

a. CFR = Code of Federal Regulations.

b. NAC = Nevada Administrative Code.

material at a geologic repository. The requirements in 10 CFR Part 60 do not apply to any nonrepository activities licensed under other parts of Title 10 of the Code of Federal Regulations.

Congress originally passed the Nuclear Waste Policy Act in 1982. The original legislation directed the Secretary of Energy to recommend potential sites to the President for possible characterization as geologic repositories, and it directed the President to select sites for characterization. The original Nuclear Waste Policy Act also required the Secretary of Energy to issue general guidelines for use in recommending potential geologic repository sites for detailed site characterization. DOE issued those guidelines in 1984 (10 CFR Part 960) and applied them when it nominated five sites as suitable for characterization and recommended characterization of three of the sites.

DOE also decided to include in the general guidelines a process for evaluating the data obtained from site characterization activities to be used in determining whether a site should be recommended for the development of a geologic repository. In 1996, DOE proposed amendments to the general guidelines to establish a site-specific standard for evaluating the suitability of the Yucca Mountain site for possible recommendation for development as a repository. DOE has not issued final amendments. In the Site Recommendation, if any, DOE will consider the guidelines applicable at that time.

Section 116(c) of the NWPA establishes a procedure by which DOE can consider and, if appropriate, address a broad array of considerations. The State of Nevada or an affected unit of local government can describe impacts that are likely to result from site characterization in a report and submit it to the Secretary of Energy. Section 116 of the NWPA allows DOE to consider these impacts as a basis for DOE providing technical or financial assistance. In contrast to the National Environmental Policy Act process, a Section 116(c) determination of impact assistance is not tied to an extensive body of past precedent or regulatory interpretations. DOE has broad discretion under Section 116(c) to consider impacts that the State of Nevada or an affected unit of local government might identify.

### **Energy Policy Act of 1992 (42 USC 10101 *et seq.*)**

The Nuclear Waste Policy Act of 1982 directed the Environmental Protection Agency to establish standards to protect the general environment from offsite releases of radioactive materials from repositories, and directed the Nuclear Regulatory Commission to issue technical requirements and criteria for such repositories. In 1992, Congress passed the Energy Policy Act, modifying the rulemaking authorities of the Environmental Protection Agency and the Nuclear Regulatory Commission with respect to a potential repository at Yucca Mountain. Section 801(a) of the Energy Policy Act of 1992 directed the Environmental Protection Agency (1) to retain the National Academy of Sciences to make findings and recommendations on reasonable public health and safety standards for Yucca Mountain, and (2) to establish Yucca Mountain-specific standards based on and consistent with these findings and recommendations. The standards are to set health-based limits for any radioactive releases from a repository at Yucca Mountain. The DOE repository design must meet Nuclear Regulatory Commission requirements for demonstrating compliance with the Environmental Protection Agency standards.

The National Academy of Sciences issued its findings and recommendations in a 1995 report (National Research Council 1995, all). When the Environmental Protection Agency establishes its final standards, it will place them in the Code of Federal Regulations, probably at 40 CFR Part 197.

Section 801(b) of the Energy Policy Act directs the Nuclear Regulatory Commission to revise its general technical requirements and criteria for geologic repositories (10 CFR Part 60) to be consistent with the site-specific Yucca Mountain standard established by the Environmental Protection Agency. In February 1999, the Nuclear Regulatory Commission issued draft site-specific technical requirements and criteria (proposed 10 CFR Part 63). When finalized, the Commission would use these requirements and criteria in their final forms to approve or disapprove an application to construct a repository at Yucca Mountain, to receive and possess spent nuclear fuel at such a repository, and to close and decommission such a repository.

**National Environmental Policy Act of 1969, as amended (42 USC 4321 *et seq.*)**

The National Environmental Policy Act requires agencies of the Federal Government to prepare environmental impact statements (EISs) on potential impacts of proposed major Federal actions that may significantly affect the quality of the human environment.

DOE has prepared this EIS in accordance with the requirements of the National Environmental Policy Act as implemented by Council on Environmental Quality regulations (40 CFR Parts 1500 through 1508) and DOE National Environmental Policy Act regulations (10 CFR Part 1021), and in conformance with the NWPA.

**Atomic Energy Act of 1954, as amended (42 USC 2011 *et seq.*)**

The Atomic Energy Act, as amended, provides fundamental jurisdictional authority to DOE and the Nuclear Regulatory Commission over governmental and commercial use of nuclear materials. The Atomic Energy Act ensures proper management, production, possession, and use of radioactive materials. It provides DOE the authority to develop generally applicable standards for protecting the environment from radioactive materials. In accordance with the Atomic Energy Act, DOE has established a system of requirements that it has issued as DOE Orders.

The Atomic Energy Act gives the Nuclear Regulatory Commission specific authority to regulate the possession, transfer, storage, and disposal of nuclear materials, as well as aspects of transportation packaging design requirements for radioactive materials, including testing for packaging certification. Commission regulations applicable to the transportation of radioactive materials (10 CFR Parts 71 and 73) require that shipping casks meet specified performance criteria under both normal transport and hypothetical accident conditions.

**Federal Land Policy and Management Act of 1976 (43 USC 1701 *et seq.*)**

The Federal Land Policy and Management Act governs the use of Federal lands administered by the Bureau of Land Management, which is an agency of the U.S. Department of the Interior. Access to and use of public lands administered by the Bureau are primarily governed by the regulations regarding the establishment of rights-of-way (43 CFR Part 2800) and withdrawals of public domain land from public use (43 CFR Part 2300) (see Table 11-1, item 2), as described below in this section.

Some implementing alternative branch rail lines, routes for heavy-haul trucks, and intermodal transfer station locations that could be involved in transportation of spent nuclear fuel and high-level radioactive waste to Yucca Mountain would cross or occupy land administered by the Bureau of Land Management and would require right-of-way reservations (see Table 11-1, item 14). DOE has obtained right-of-way reservations from the Bureau of Land Management and a concurrence from the U.S. Air Force for access to the Yucca Mountain vicinity for characterization activities.

To develop a monitored geologic repository at Yucca Mountain, DOE would need to obtain control of Bureau of Land Management, Air Force, and DOE lands in western Nevada. Land withdrawal is the method by which the Federal Government gives exclusive control of land it owns to a particular agency for a particular purpose. Nuclear Regulatory Commission licensing conditions for a repository include a requirement that DOE either own or have permanent control of lands for which it is seeking a repository license, and that lands used for a repository be free and clear of all encumbrances, if significant, such as (1) rights arising under the general mining laws, (2) easements or rights-of-way, and (3) all other rights arising under lease, rights of entry, deed, patent, mortgage, appropriation, prescription, or otherwise.

The Federal Land Policy and Management Act, by which the Government accomplishes most Federal land withdrawals, contains a detailed procedure for application, review, and study by the Bureau of Land

Management, and decisions by the Secretary of the Interior on withdrawal and on the terms and conditions of withdrawal. Withdrawals accomplished through the Federal Land Policy and Management Act remain valid for no more than 20 years and, therefore, do not appear to meet the permanency of control required by the Nuclear Regulatory Commission.

Only Congress has the power to withdraw Federal lands permanently for the exclusive purposes of specific agencies. Through legislative action, Congress can authorize and direct a permanent withdrawal of lands such as those proposed for the Yucca Mountain Repository. In addition, Congress would determine any conditions associated with the land withdrawal.

### **Executive Order 11514, *National Environmental Policy Act, Protection and Enhancement of Environmental Quality***

Executive Order 11514 directs Federal agencies to monitor and control their activities continually to protect and enhance the quality of the environment. The Order also requires the development of procedures both to ensure the fullest practicable provision of timely public information and understanding of Federal plans and programs with potential environmental impacts, and to obtain the views of interested parties. DOE has promulgated regulations (10 CFR Part 1021, *National Environmental Policy Act Implementing Procedures*) and has issued a DOE Order (451.1A, *National Environmental Policy Act Compliance Program*) to ensure compliance with this Executive Order.

## **11.2 Statutes, Regulations, and Orders Regarding Environmental Protection Requirements**

### **11.2.1 AIR QUALITY**

#### **Clean Air Act, as amended (42 USC 7401 *et seq.*)**

The Clean Air Act is intended to “protect and enhance the quality of the Nation’s air resources so as to promote the public health and welfare and the productive capacity of its population.” Section 118 of the Act requires Federal agencies such as DOE, with jurisdiction over any property or facility that might result in the discharge of air pollutants, to comply with “all Federal, state, interstate, and local requirements” related to the control and abatement of air pollution.

The Clean Air Act requires the Environmental Protection Agency to establish National Ambient Air Quality Standards to protect public health, with an adequate margin of safety, from any known or anticipated adverse effects of a regulated pollutant (42 USC 7409). It also requires the establishment of national standards of performance for new or modified stationary sources of atmospheric pollutants (42 USC 7411) and the evaluation of specific emission increases to prevent a significant deterioration in air quality (42 USC 7470). In addition, the Clean Air Act regulates emissions of hazardous air pollutants, including radionuclides, through the National Emission Standards for Hazardous Air Pollutants Program (40 CFR Parts 61 and 63). Air emission standards are established at 40 CFR Parts 50 through 99.

#### **Nevada Revised Statutes: Air Emission Controls, Chapter 445B**

These statutes and regulations in the Nevada Administrative Code implement State and Federal Clean Air Act provisions, identify the requirements for permits for each air pollution source (unless it is specifically exempted), and identify ongoing monitoring requirements. In accordance with the Clean Air Act, DOE could have to obtain an Operating Permit from the Nevada Division of Environmental Protection for the control of gaseous, liquid, and particulate emissions associated with the construction and operation of a repository at Yucca Mountain (see Table 11-1, item 4). To ensure that its site

characterization activities comply with applicable Clean Air Act and State provisions, DOE has obtained an operating permit for surface disturbances and point source emissions.

### **11.2.2 WATER QUALITY**

#### **Safe Drinking Water Act, as amended [42 USC 300(f) *et seq.*]**

The primary objective of the Safe Drinking Water Act is to protect the quality of public water supplies. This law grants the Environmental Protection Agency the authority to protect the quality of public drinking water supplies by establishing national primary drinking water regulations. In accordance with the Safe Drinking Water Act, the Environmental Protection Agency has delegated authority for enforcement of drinking water standards to the states. Regulations (40 CFR Parts 123, 141, 145, 147, and 149) specify maximum contaminant levels, including those for radioactivity, in public water systems, which are generally defined as systems that serve at least 15 service connections or regularly serve at least 25 year-round residents.

The Safe Drinking Water Act also authorizes the Environmental Protection Agency to regulate the underground injection of waste and other contaminants into wells. The Agency has codified its regulations at 40 CFR Part 144. The Proposed Action would not constitute underground injection.

In 1978, the Environmental Protection Agency approved the Nevada program for enforcing drinking water standards. The Nevada Health Division is responsible for enforcement of these standards. The proposed repository would include a drinking water system that obtained water from a source off the repository site, and DOE would operate the system in accordance with Nevada Health Division permitting requirements, if applicable (see Table 11-1, item 6).

#### **Clean Water Act of 1977 (33 USC 1251 *et seq.*)**

The purpose of the Clean Water Act, which amended the Federal Water Pollution Control Act, is to “restore and maintain the chemical, physical, and biological integrity of the Nation’s water.” The State of Nevada has been delegated the authority to implement and enforce most programs in the State under the Clean Water Act; exceptions include those addressed by Section 404, which is administered by the U.S. Army Corps of Engineers, as described below in this section.

The Clean Water Act prohibits the “discharge of toxic pollutants in toxic amounts” to navigable waters of the United States. Section 313 of the Act generally requires all departments and agencies of the Federal Government engaged in any activity that might result in a discharge or runoff of pollutants to surface waters to comply with Federal, state, interstate, and local requirements. Under the Clean Water Act, states generally set water quality standards, and the Environmental Protection Agency and states regulate and issue permits for point-source discharges as part of the National Pollutant Discharge Elimination System permitting program. The Environmental Protection Agency regulations for this program are codified at 40 CFR Part 122, and Nevada rules for this program are codified at Nevada Administrative Code Chapter 445A. If the construction or operation of a Yucca Mountain Project facility or associated transportation route in Nevada would result in point-source discharges, DOE could need to obtain a National Pollutant Discharge Elimination System permit from the State of Nevada Division of Environmental Protection (see Table 11-1, item 8).

Sections 401 and 405 of the Water Quality Act of 1987 added Section 402(p) to the Clean Water Act. Section 402(p) requires the Environmental Protection Agency to establish regulations for the Agency or individual states to issue permits for stormwater discharges associated with industrial activity, including construction activities that could disturb 5 or more acres (40 CFR Part 122). Nevada rules for this



program are codified at Nevada Administrative Code Chapter 445A. The Agency has promulgated regulations implementing a separate stormwater permit application process.

Section 404 of the Clean Water Act gives the U.S. Army Corps of Engineers permitting authority over activities that discharge dredge or fill material into waters of the United States. DOE could need to obtain a permit from the Corps for activities associated with a repository at Yucca Mountain if those activities would discharge dredge or fill into any such waters. If the construction or modification of rail lines or highways to the repository included dredge or fill activities or other actions that would discharge dredge or fill into waters of the United States, those activities would also require Section 404 permits. DOE has obtained a Section 404 permit for site characterization-related construction activities it might conduct in Coyote Wash or its tributaries or in Fortymile Wash.

#### **Nevada Revised Statutes: Water Controls, Chapter 445A**

These statutes classify the waters of the State, establish standards for the quality of all waters in the State, and specify permitting and notification provisions for stormwater discharges and for other discharges to waters of the State in accordance with provisions of the Federal Clean Water Act. These statutes and regulations in the Nevada Administrative Code also (1) set drinking water standards, specifications for certification, and conditions for issuance of variances and exemptions, (2) set standards and requirements for the construction of wells and other water supply systems, (3) establish the different classes of wells and aquifer exemptions, and (4) establish requirements for well operation and monitoring, plugging, and abandonment activities. Regardless of whether these provisions are applicable, DOE has obtained an Underground Injection Control Permit and a Public Water System Permit for site characterization activities at Yucca Mountain. The Underground Injection Control Permit covers tracers, pump tests, and similar activities. The Public Water System Permit establishes the terms for the provision of potable water.

The Department would install and operate the drinking water system planned for the proposed repository in accordance with Nevada Health Division standards, if applicable, and could obtain a Water System Operating Permit from the Nevada Health Division (see Table 11-1, item 6). DOE could need to obtain a General Permit for Storm Water Discharge from the Nevada Division of Water Resources to construct and operate a repository at Yucca Mountain (see Table 11-1, item 7). Any point-source discharges to waters of the State that occurred in the course of Yucca Mountain Project activities could require a National Pollutant Discharge Elimination System permit issued under these provisions. Regardless of whether these provisions are applicable, DOE has obtained a general discharge permit from the State for effluent discharges to the ground surface during site characterization.

#### **Nevada Revised Statutes: Underground Water and Wells, Chapter 534**

These statutes and regulations in the Nevada Administrative Code establish the ownership of underground waters in the State and their appropriation for beneficial use. The regulations also establish licensing requirements for well drillers; requirements for drilling, construction, and plugging of wells; and protection of aquifers from pollution and waste. Regardless of whether these provisions are applicable, DOE has obtained a permit for the use of underground water from several wells during site characterization, and it could apply for additional or expanded authority under these provisions, if needed and applicable.

#### **Executive Order 11988, Floodplain Management**

This Order directs Federal agencies to establish procedures to ensure that any Federal action undertaken in a floodplain considers the potential effects of flood hazards and floodplain management and avoids floodplain impacts to the extent practicable. For its site characterization activities, DOE conducted a

floodplain assessment (see Appendix L) in accordance with this Order (DOE 1992b, all) and DOE implementing regulations (10 CFR Part 1022).

### **Compliance With Floodplain/Wetlands Environmental Review Requirements (10 CFR Part 1022)**

Federal regulations (10 CFR Part 1022) establish policy and procedures for implementing Executive Order 11988, *Floodplain Management*, and for discharging DOE responsibilities regarding the consideration of floodplain/wetlands factors in DOE planning and decisionmaking. These regulations also establish DOE procedures for identifying proposed actions located in floodplains, providing opportunity for early public review of such proposed actions, preparing floodplain assessments, and issuing statements of findings for actions in a floodplain. The rules apply to all DOE proposed floodplain actions.

If DOE determines that an action it proposes would take place wholly or partly in a floodplain, it is required to prepare a notice of floodplain involvement and a floodplain assessment containing a project description, a discussion of floodplain effects, alternatives, and mitigations. For a proposed floodplain action for which a National Environmental Policy Act document such as an environmental impact statement or an environmental assessment is required, DOE is to include the floodplain assessment in the document. For floodplain actions for which DOE does not have to prepare such a document, the Department is to issue a separate document as the floodplain assessment. After the conclusion of public comment, DOE is to reevaluate the practicability of alternatives and of mitigation measures, considering all substantive comments.

If it finds that no practicable alternative to locating in the floodplain is available, DOE must design or modify its action to minimize potential harm to and within the floodplain. For actions in a floodplain, DOE must publish a statement of findings of three pages or less containing a brief description of the proposed action, a location map, an explanation indicating the reason for locating the action in the floodplain, a list of alternatives considered, a statement indicating whether the action conforms to applicable State or local floodplain protection standards, and a brief description of steps DOE will take to minimize potential harm to or within the floodplain. For floodplain actions that require the preparation of an EIS, the Final EIS can incorporate the statement of findings. Before implementing a proposed floodplain action, DOE must endeavor to allow at least 15 days of public review of the statement of findings.

Appendix L contains a floodplain/wetlands assessment that examines the effects of proposed repository construction and operation and potential construction of a rail line or intermodal transfer station. The assessment includes discussion of:

1. Floodplains near Yucca Mountain (Fortymile Wash, Busted Butte Wash, Drillhole Wash, and Midway Valley Wash); there are no delineated wetlands at Yucca Mountain.
2. What is known about floodplains and areas that might have wetlands (for example, springs and riparian areas) along potential rail corridors in Nevada and at intermodal transfer station locations associated with heavy-haul routes. If DOE selects rail as the mode of spent nuclear fuel and high-level radioactive waste transport in Nevada to Yucca Mountain, one of five rail corridors would be selected. If DOE selected heavy-haul as the mode of transport for spent nuclear fuel and high-level radioactive waste to Yucca Mountain, it would select one of five heavy-haul routes and one of three intermodal transfer stations, and would prepare a more detailed floodplain/wetlands assessment of the selected rail corridor or heavy-haul route.

### 11.2.3 HAZARDOUS MATERIALS PACKAGING AND TRANSPORTATION

#### **Hazardous Materials Transportation Act (49 USC 1801)**

The Hazardous Materials Transportation Act gives the U.S. Department of Transportation authority to regulate the transport of hazardous materials, including radioactive materials such as those that would be transported to the proposed Yucca Mountain Repository from 72 commercial and 5 DOE sites. Department of Transportation regulations (49 CFR Parts 171 through 180) would require the identification of hazardous materials during transportation to a repository at Yucca Mountain, set forth rules for the selection of routes that carriers must use when transporting such materials, and provide guidance to states in designating preferred routes.

#### **Emergency Planning and Community Right-to-Know Act of 1986 (42 USC 1001 *et seq.*)**

Under Subtitle A of the Emergency Planning and Community Right-to-Know Act (also known as “SARA Title III”), Federal facilities, including a repository at Yucca Mountain, must provide information on hazardous and toxic chemicals to state emergency response commissions, local emergency planning committees, and the Environmental Protection Agency. The goal of providing this information is to ensure that emergency plans are sufficient to respond to unplanned releases of hazardous substances. The required information includes inventories of specific chemicals used or stored and descriptions of releases that occur from sites. This law, implemented at 40 CFR Parts 302 through 372, requires agencies to provide material safety data sheet reports, emergency and hazardous chemical inventory reports, and toxic chemical release reports to appropriate local, state, and Federal agencies. DOE has been complying with the provisions of the Emergency Planning and Community Right-to-Know Act and with regulations for maintaining and using inventories of chemicals for site characterization activities. If the proposed repository received a license, DOE would continue to comply with such provisions, as applicable, in storing and using chemicals for project activities.

#### **Nevada Revised Statutes: Hazardous Materials, Chapter 459**

A Nevada Hazardous Materials Storage Permit could be required to store hazardous materials in quantities greater than those specified in the Uniform Fire Code. To receive such a permit, if sought, DOE would submit an application to the Nevada State Fire Marshal (Nevada Revised Statutes, Chapter 477) that describes its plans for the storage of hazardous materials in excess of specified quantities (see Table 11-1, item 16). If permit renewal was sought each year, DOE would have to submit an annual report to the State Fire Marshal that complied with the reporting requirements of the Federal Emergency Planning and Community-Right-to-Know Act, Sections 302, 311, and 312. Regardless of whether these provisions are applicable, DOE has obtained a permit from the State Fire Marshal for the storage of flammable materials during site characterization activities.

#### **Nuclear Regulatory Commission Radioactive Materials Packaging and Transportation Regulations (10 CFR Parts 71 and 73)**

Under 10 CFR Part 71, the Nuclear Regulatory Commission regulates the packaging and transport of spent nuclear fuel for its licensees, which include commercial shippers of radioactive material and the DOE Office of Civilian Radioactive Waste Management. In addition, under an agreement with the U.S. Department of Transportation, the Commission sets the standards for packages containing Type B quantities of radioactive materials, including high-level radioactive waste and spent nuclear fuel. Type B packages are designed and built to retain their radioactive contents in both normal and accident conditions.

The demonstration of compliance with these requirements applies a combination of simple calculational methods, computer modeling techniques, and physical testing to the design features of the package. An applicant presents the results of the analyses and tests to the Nuclear Regulatory Commission in a Safety

Analysis Report for Packaging, which the Commission, after review, approves by issuing a Certificate of Compliance. This certificate would be required for the use of a package (cask) to ship spent nuclear fuel or high-level radioactive waste to the repository.

The regulations at 10 CFR Part 73 govern safeguards and physical security during the transit of shipments of spent nuclear fuel. These regulations specify requirements for vehicles, carrier personnel, communications, notification of state governors, escorts, and route planning for such shipments.

### **Department of Transportation Hazardous Materials Packaging and Transportation Regulations 49 CFR Subchapter C – Hazardous Materials Regulations, Parts 171 Through 180)**

The Department of Transportation regulates the shipments of hazardous materials, including spent nuclear fuel and high-level radioactive waste, in interstate and intrastate commerce by land, air, and navigable water. As outlined in a 1979 Memorandum of Understanding with the Nuclear Regulatory Commission (44 *FR* 38690, July 2, 1979), the Department of Transportation specifically regulates carriers of spent nuclear fuel and the conditions of transport, such as routing, handling and storage, and vehicle and driver requirements. It also regulates the labeling, classification, and marking of transportation packages for radioactive materials.

Department of Transportation regulations include requirements for carriers, drivers, vehicles, routing, packaging, labeling, marking, placarding of vehicles, shipping papers, training, and emergency response. The requirements specify the maximum dose rate associated with radioactive material shipments and the maximum allowable levels of radioactive surface contamination on packages and vehicles.

The public highway routing regulations of the Department of Transportation are prescribed in 49 CFR Part 397. The objectives of the regulations are to reduce the impacts of transporting highway route-controlled quantities of radioactive materials to establish consistent and uniform requirements for route selection, and to identify the role of state and local governments in the routing. The requirements at 49 CFR 173.403(l) contain a complete definition of a highway route-controlled quantity of radioactive material. A highway route-controlled quantity of radioactive material (49 CFR 173.403) is a quantity in a single package (shipping cask) that exceeds the smallest of:

- 3,000 times the  $A_1$  values of the radionuclides as specified in 10 CFR 173.435 for special form Class 7 (radioactive) material
- 3,000 times the  $A_2$  values of the radionuclides as specified in 10 CFR 173.433 for normal form Class 7 (radioactive) material
- 27,000 curies

Shipping casks transported by legal-weight trucks typically would contain about 300,000 curies of radionuclides, and rail casks typically would contain larger quantities. These regulations attempt to reduce potential hazards by requiring the use of routes that avoid populous areas and minimize travel times. At present, the Department of Transportation does not regulate the routing of rail shipments of radioactive materials. Department of Transportation regulations also include requirements to protect the health and safety of transportation workers.

## **11.2.4 CONTROL OF POLLUTION**

### **Pollution Prevention Act of 1990 (42 USC 13101 *et seq.*)**

The Pollution Prevention Act of 1990 establishes a national policy for waste management and pollution control that focuses first on source reduction, then on environmentally safe recycling, treatment, and

disposal. DOE requires each of its sites to establish specific goals to reduce the generation of waste. If the Department built and operated a repository at the Yucca Mountain site, it would implement an appropriate pollution prevention plan. DOE has implemented a pollution prevention plan for site characterization activities. DOE would update this plan to include construction, operation and monitoring, and closure activities if the repository received a license.

**Comprehensive Environmental Response, Compensation, and Liability Act, as amended (42 USC 9601 *et seq.*)**

The Comprehensive Environmental Response, Compensation, and Liability Act, as amended by the Superfund Amendments and Reauthorization Act, authorizes the Environmental Protection Agency to require responsible site owners, operators, arrangers, and transporters to clean up releases of hazardous substances, including certain radioactive substances. Under this Act, the Environmental Protection Agency would have the authority to regulate hazardous substances, including certain radioactive materials, at the Yucca Mountain Repository in the event of a release or a “substantial threat of a release” of those materials from the repository. Releases greater than reportable quantities would be reported to the National Response Center.

**Standards for Protection Against Radiation (10 CFR Part 20)**

The purpose of 10 CFR Part 20 is to provide standards and procedures for protection against radiation. Provisions of 10 CFR Part 20 address radiation protection programs, occupational dose limits, public dose limits, survey and monitoring procedures, exposure control in restricted areas, respiratory protection and controls, precautionary procedures, and related topics.

**Resource Conservation and Recovery Act, as amended (42 USC 6901 *et seq.*)**

The treatment, storage, and disposal of hazardous and nonhazardous waste is regulated in accordance with the provisions of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act and the Hazardous and Solid Waste Amendments of 1984, and applicable state laws.

Environmental Protection Agency regulations implementing the hazardous waste portions of the Resource Conservation and Recovery Act define hazardous wastes and specify requirements for their transportation, handling, treatment, storage, and disposal (40 CFR Parts 260 through 272). In addition, under current Civilian Radioactive Waste system requirements, DOE could not accept hazardous waste for disposal at Yucca Mountain. Before shipping to Yucca Mountain, DOE would treat materials that contained hazardous components to eliminate the hazardous waste characteristics. Before shipping materials containing hazardous components listed under Subpart D of Part 261 or applicable state requirements, DOE would process any necessary delisting petitions with the appropriate regulatory authorities. If the activities at Yucca Mountain generated hazardous or mixed waste, the Department would not treat or dispose of such waste on the site, and would not store such waste on the site for more than 90 days. DOE does not expect to need a Resource Conservation and Recovery Act permit for its activities at the proposed repository.

**Noise Control Act of 1972, as amended (42 USC 4901 *et seq.*)**

Section 4 of the Noise Control Act directs Federal agencies to carry out programs in their jurisdictions “to the fullest extent within their authority” and in a manner that furthers a national policy of promoting an environment free from noise that jeopardizes health and welfare. This law provides requirements related to noise that would be generated by construction, operation, or closure activities associated with the Proposed Action at Yucca Mountain.

### **Nevada Revised Statutes: Sanitation, Chapter 444**

These statutes and regulations in the Nevada Administrative Code establish the standards, permits, and requirements for septic tanks and other sewage disposal systems for single-family dwellings, communities, and commercial buildings. The construction and operation of a sanitary sewage collection system at Yucca Mountain could require the State of Nevada to approve DOE designs and to issue a permit. In connection with site characterization activities, DOE operates a septic system that the State has permitted under these provisions.

These statutes and regulations also set forth the definitions, methods of disposal, special requirements for solid waste collection and transportation standards, and classification of landfills. Onsite disposal of solid waste from a repository at Yucca Mountain could require that DOE obtain an appropriate permit for these activities.

In compliance with the Resource Conservation and Recovery Act, the Environmental Protection Agency has authorized the State of Nevada to regulate the management and disposal of solid, hazardous, and mixed wastes in the State. The Nevada Division of Environmental Protection or an equivalent solid waste management authority would regulate the onsite disposal of nonhazardous solid wastes generated by activities associated with the proposed repository. DOE would manage such waste in accordance with applicable laws and regulations.

Nevada Administrative Code Chapter 444 contains regulations that provide for fees, variances, and permits, and has adopted Environmental Protection Agency regulations (40 CFR Parts 2, 124, and 260 through 270) as part of the code. The regulations could affect any hazardous or mixed waste generated, treated, or stored onsite by activities associated with a proposed repository at Yucca Mountain. DOE would ship any generated hazardous or mixed wastes off the site within 90 days for treatment, storage, and disposal.

### **Executive Order 12088, *Federal Compliance with Pollution Control Standards***

Executive Order 12088, as amended by Executive Order 12580, *Federal Compliance with Pollution Control Standards*, generally directs Federal agencies to comply with applicable administrative and procedural pollution control standards established by, but not limited to, the Clean Air Act, the Noise Control Act, the Clean Water Act, the Safe Drinking Water Act, the Toxic Substances Control Act, and the Resource Conservation and Recovery Act. Compliance with these orders, as applicable, would be required for a range of DOE activities associated with a proposed repository at Yucca Mountain.

### **Executive Order 12856, *Right to Know Laws and Pollution Prevention Requirements***

This Order directs Federal agencies to reduce and report toxic chemicals entering any waste stream; improve emergency planning, response, and accident notification; and encourage the use of clean technologies and testing of innovative prevention technologies. In addition, the Order states that Federal agencies are persons for purposes of the Emergency Planning and Community Right-to-Know Act (SARA Title III), which requires agencies to meet the requirements of the Act. Compliance with these orders, as applicable, would be required for a range of DOE activities associated with a proposed repository at Yucca Mountain.

## **11.2.5 CULTURAL RESOURCES**

### **National Historic Preservation Act, as amended (16 USC 470 *et seq.*)**

The National Historic Preservation Act provides for the placement of sites with significant national historic value on the *National Register of Historic Places*. It requires no permits or certifications. DOE would evaluate activities associated with a repository at Yucca Mountain to determine if they would

affect historic resources. If required after this evaluation, the Department would consult with the Advisory Council on Historic Preservation and the Nevada State Historic Preservation Officer. Such consultations generally result in the development of an agreement that includes stipulations to be followed to minimize or mitigate potential adverse impacts to a historic resource (see Table 11-1, item 9).

DOE has entered into a programmatic agreement with the Advisory Council on Historic Preservation for implementation of the National Historic Preservation Act for site characterization activities. This agreement requires DOE to consult and interact with Native Americans during site characterization. In compliance with the agreement provisions, Native American representatives from the Southern Paiute, Western Shoshone, and Owens Valley Paiute and Shoshone Tribes have reviewed Yucca Mountain activities on the site twice each year. These reviews have been followed by discussions between Native American representatives and DOE personnel, submittal of comments by the Native American representatives, and responses to the comments by DOE. If the proposed site was authorized, the implementing agreement would be modified as appropriate and additional consultations would occur under Section 106 of the National Historic Preservation Act (16 USC 106).

**Archaeological Resources Protection Act, as amended (16 USC 470aa *et seq.*)**

The Archaeological Resources Protection Act requires a permit for excavation or removal of archaeological resources from publicly held or Native American lands (see Table 11-1, item 11). Excavations must further archaeological knowledge in the public interest, and the resources removed are to remain the property of the United States. If a resource is found on land owned by a Native American tribe, the tribe must give its consent before a permit is issued, and the permit must contain terms or conditions requested by the tribe. Requirements of the Archaeological Resources Protection Act would apply to any Yucca Mountain Project excavation activities that resulted in identification of archaeological resources.

**American Indian Religious Freedom Act of 1978 (42 USC 1996)**

The American Indian Religious Freedom Act reaffirms Native American religious freedom under the First Amendment and establishes policy to protect and preserve the inherent and constitutional right of Native Americans to believe, express, and exercise their traditional religions. This law ensures the protection of sacred locations and access of Native Americans to those sacred locations and traditional resources that are integral to the practice of their religions. Further, it establishes requirements that would apply to Native American sacred locations, traditional resources, or traditional religious practices potentially affected by the construction and operation of a repository at Yucca Mountain.

**Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001)**

The Native American Graves Protection and Repatriation Act directs the Secretary of the Interior to guide the repatriation of Federal archaeological collections and collections that are culturally affiliated with Native American tribes and held by museums that receive Federal funding. Major actions to be taken under this law include (1) the establishment of a review committee with monitoring and policymaking responsibilities, (2) the development of regulations for repatriation, including procedures for identifying lineal descent or cultural affiliation needed for claims, (3) the oversight of museum programs designed to meet the inventory requirements and deadlines of this law, and (4) the development of procedures to handle unexpected discoveries of graves or grave goods during activities on Federal or tribal land. The provisions of the Act would be invoked if any excavations associated with a repository at Yucca Mountain led to unexpected discoveries of Native American graves or grave artifacts. DOE and the Southern Paiute, Western Shoshone, and Owens Valley Paiute and Shoshone Tribes have entered an agreement to address the potential applicability of the Native American Graves Protection and Repatriation Act to artifacts collected during site characterization activities at Yucca Mountain.

### **Antiquities Act (16 USC 431 *et seq.*)**

The Antiquities Act protects historic and prehistoric ruins, monuments, and objects of antiquity (including paleontological resources) on lands owned or controlled by the Federal Government. If historic or prehistoric ruins or objects were found during the construction or operation of facilities associated with a repository at Yucca Mountain, DOE would have to determine if adverse effects to these ruins or objects would occur. If adverse effects would occur, the Secretary of the Interior would have to grant permission to proceed with the activity (36 CFR Part 296 and 43 CFR Parts 3 and 7) (see Table 11-1, item 10).

### **Executive Order 11593, *National Historic Preservation***

This Order directs Federal agencies, including DOE, to locate, inventory, and nominate properties under their jurisdiction or control to the *National Register of Historic Places*. This process requires DOE to provide the Advisory Council on Historic Preservation the opportunity to comment on the possible impacts of proposed activities.

### **Executive Order 13007, *Indian Sacred Sites***

This Order directs Federal agencies, to the extent permitted by law and not inconsistent with agency missions, to avoid adverse effects to sacred sites and to provide access to those sites to Native Americans for religious practices. The Order directs agencies to plan projects to provide protection of and access to sacred sites to the extent compatible with the project.

### **Executive Order 13094, *Consultation and Coordination with Indian Tribal Governments***

This Order directs Federal agencies to establish regular and meaningful consultation and collaboration with tribal governments in the development of regulatory practices on Federal matters that significantly or uniquely affect their communities; reduce the imposition of unfunded mandates on tribal governments; and streamline the application process for and increase the availability of waivers to tribal governments.

## **11.2.6 ENVIRONMENTAL JUSTICE**

### **Executive Order 12898, *Environmental Justice***

This Order directs Federal agencies, to the extent practicable, to make the achievement of environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations in the United States and its territories and possessions. The order provides that the Federal agency responsibilities it establishes are to apply equally to Native American programs.

## **11.2.7 ECOLOGY AND HABITAT**

### **Endangered Species Act, as amended (16 USC 1531 *et seq.*)**

The Endangered Species Act provides a program for the conservation of threatened and endangered species and the ecosystems on which those species rely. If a proposed action could affect threatened or endangered species or their habitat, the Federal agency must assess the potential impacts and develop measures to minimize those impacts. The agency then must consult with the Fish and Wildlife Service (part of the U.S. Department of the Interior) and the National Marine Fisheries Service (part of the Department of Commerce), as required under Section 7 of the Act. The outcome of this consultation would be a biological opinion by the Fish and Wildlife Service or the National Marine Fisheries Service that stated whether the proposed action would jeopardize the continued existence of the species under consideration. If there is a non-jeopardy opinion, but if some individuals might be killed incidentally as a result of the proposed action, the Services can determine that such losses are not prohibited as long as



measures outlined by the Services are followed. Regulations implementing the Endangered Species Act are codified at 50 CFR Parts 15 and 402.

There are no known endangered species on the Yucca Mountain site. The desert tortoise is the only threatened species found on the site. The Fish and Wildlife Service has issued a biological opinion stating that site characterization activities at Yucca Mountain would not jeopardize the continued existence of the desert tortoise (Buchanan 1997, page 16).

DOE will prepare a biological assessment on the effects of the proposed repository on threatened or endangered species before making a determination whether to recommend approval of the Yucca Mountain Site. In addition, DOE will fulfill the requirements of the Endangered Species Act, as appropriate, with regard to transportation impacts before making the recommendation determination.

**Fish and Wildlife Coordination Act, as amended (16 USC 661, 48 Stat. 401)**

The Fish and Wildlife Coordination Act promotes more effectual planning and cooperation between Federal, state, public, and private agencies for the conservation and rehabilitation of the Nation's fish and wildlife and authorizes the Department of the Interior to provide assistance.

**Migratory Bird Treaty Act, as amended (16 USC 703 *et seq.*)**

The purpose of the Migratory Bird Treaty Act is to protect birds that have common migration patterns between the United States and Canada, Mexico, Japan, and Russia. It regulates the take and harvest of migratory birds. The Fish and Wildlife Service will review this EIS to determine whether the activities analyzed would comply with the requirements of the Migratory Bird Treaty Act. Studies indicate that no requirements of this Act are applicable to the Yucca Mountain Project.

**Bald and Golden Eagle Protection Act, as amended (16 USC 668-668d)**

The Bald and Golden Eagle Protection Act makes it unlawful to take, pursue, molest, or disturb bald (American) and golden eagles, their nests, or their eggs anywhere in the United States (Section 668, 668c). The Department of the Interior regulates activities that might adversely affect bald and golden eagles. The Fish and Wildlife Service will review this EIS to determine whether the activities analyzed in this EIS would comply with the Bald and Golden Eagle Protection Act. DOE has established a program to ensure compliance with this law during site characterization activities.

**National Wildlife Refuge System Administration Act of 1966 (42 USC 668dd)**

The National Wildlife Refuge System Administration Act provides guidelines for the administration and management of lands in the system, including "wildlife refuges, areas for the protection and conservation of fish and wildlife that are threatened with extinction, wildlife ranges, game ranges, wildlife management areas, or waterfowl production areas." If use of lands for transportation corridors and facilities such as a rail line or intermodal transfer station associated with a repository at Yucca Mountain could affect lands in the system, DOE would consult with the Fish and Wildlife Service. Regulations implementing the Act are codified at 50 CFR Parts 25 and 27 through 29. The Fish and Wildlife Service will review this EIS to determine if the Proposed Action would comply with the Act. It is DOE policy to place transportation corridors and facilities to avoid existing wildlife refuges.

**Nevada Revised Statutes: Protection and Preservation of Timbered Lands, Trees, and Flora, Chapter 527**

These provisions broadly protect the indigenous flora of the State of Nevada. If the State determines that a species or subspecies of native flora is threatened with extinction, that species or subspecies is to be placed on the State list of fully protected species. In general, no member of the species or subspecies may be taken or destroyed unless an authorized State official issues a special permit. Activities

associated with a repository at Yucca Mountain arguably could affect such species and could require special permits.

**Nevada Revised Statutes: Hunting, Fishing, and Trapping; Miscellaneous Protective Measures, Chapter 503; Nevada Administrative Code, Chapter 503: Sections 010-104, General Provisions**

These provisions specify procedures for the classification and protection of wildlife. If the State determines that an animal species is threatened with extinction, the species is to be placed on the State list of fully protected species. In general, no member of the species may be taken or destroyed unless the Nevada Division of Wildlife issues a special permit. Activities associated with a repository at Yucca Mountain arguably could affect such species and could require special permits. Regardless of whether these provisions are applicable, DOE has obtained a permit for site characterization activities from the State of Nevada.

**Executive Order 11990, *Protection of Wetlands***

This order directs Federal agencies to avoid new construction in wetlands unless there is no practicable alternative and unless the proposed action includes all practicable measures to minimize harm to wetlands that might result from such use. DOE requirements for compliance with wetlands activity review procedures are codified at 10 CFR Part 1022.

**Executive Order 13112, *Invasive Species***

This order directs Federal agencies to act to prevent the introduction of or to monitor and control invasive (non-native) species, to provide for restoration of native species, to conduct research, to promote educational activities, and to exercise care in taking actions that could promote the introduction or spread of invasive species. If a repository were constructed at Yucca Mountain, DOE would comply with provisions of this Executive Order as part of construction, operation and monitoring, and closure activities.

## **11.2.8 USE OF LAND AND WATER BODIES**

**Coastal Zone Management Act (16 USC 1451 *et seq.*)**

The purpose of the Coastal Zone Management Act is to preserve, protect, develop, restore, and enhance the resources of the Nation's coastal zone. Resources include wetlands, floodplains, estuaries, beaches, dunes, barrier islands, coral reefs, and fish and wildlife and their habitat. This law provides for (1) management to minimize the loss of life and property caused by improper development and by the destruction of natural protective features such as beaches, dunes, wetlands, and barrier islands, and (2) improvement, safeguarding, and restoration of the quality of coastal waters, and for protection of existing uses of those waters. The Coastal Zone Management Act requires priority consideration to coastal-dependent uses and orderly processes for siting major facilities related to national defense, energy, fisheries development, recreation, ports and transportation, and the location of new commercial and industrial developments in or adjacent to areas where such development already exists.

The operation of a repository at Yucca Mountain could require the use of barges for transportation of spent nuclear fuel along portions of routes from some storage facilities. In addition, rail corridors, roads, and bridges from some storage facilities could require repair or enhancement before they could support shipment of spent nuclear fuel. DOE would ensure that its activities are consistent with state-specific coastal zone management plans promulgated in accordance with this Act, if applicable. The regulations promulgated under the Act are codified at 15 CFR Part 930.

### **Rivers and Harbors Act (33 USC 401 et seq.)**

The transportation of spent nuclear fuel and high-level radioactive waste could require the construction or modification of road or rail bridges that span navigable waters. The Rivers and Harbors Act prevents the alteration or modification of the course, location, condition, or capacity of any channel of any navigable water of the United States without a permit from the U.S. Army Corps of Engineers. If DOE assumed responsibility for such construction or modifications, it would need to obtain a permit from the U.S. Army Corps of Engineers. Regulations implementing this Act are codified at 33 CFR Part 323.

### **National Forest Organic Administrative Act (16 USC 521)**

The National Forest Organic Administrative Act establishes the functions and responsibilities of the Forest Service, an agency of the U.S. Department of Agriculture. The Forest Service would be requested to approve the construction of rail lines and roads in Nevada that would be associated with the operation of a repository at Yucca Mountain and that could cross land administered by the Service (16 USC 1600, 1611-14).

### **National Forest Management Act of 1976**

The National Forest Management Act establishes decision planning and management practices for forests. This law could affect any proposed construction of rail lines or roads associated with the construction or operation of a repository at Yucca Mountain that could cross National Forest lands.

### **Materials Act of 1947 (30 USC 601-603)**

The Materials Act authorizes land management agencies, such as the Bureau of Land Management and the Forest Service, to make common varieties of sand, stone, and gravel from public lands available to Federal and state agencies under a Free Use Permit (see Table 11-1, item 12). Regulations implementing the Materials Act are codified at 43 CFR Part 3600. DOE has received three free use permits from the Bureau of Land Management to obtain gravel for site characterization activities in a manner compliant with the Materials Act.

### **Taylor Grazing Act (43 USC 315-316)**

The Taylor Grazing Act establishes the processes by which the Bureau of Land Management grants and administers grazing rights. If a decision is made to construct and operate a repository, a new rail line, or a new road on a Bureau of Land Management grazing allotment, DOE would have to acquire a right-of-way grant across the allotment or a withdrawal of the allotment. Regulations implementing this Act are codified at 43 CFR Part 4100.

### **Farmland Protection Policy Act (7 USC 4201 et seq.)**

The Farmland Protection Policy Act seeks to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmlands to nonagricultural uses. Compliance with this law requires concurrence from the Natural Resources Conservation Service of the U.S. Department of Agriculture that proposed activities would not affect farmlands. DOE has completed a consultation with the Natural Resources Conservation Service that determined that a repository at Yucca Mountain would not affect prime or unique farmlands. This EIS assesses the potential construction of a rail line, new roads, or an intermodal transfer station in Nevada to determine if that construction could affect such lands. Regulations implementing the Farmland Protection Policy Act are codified at 7 CFR Part 658.

## **11.3 Department of Energy Orders**

Under the authority of the Atomic Energy Act, DOE is responsible for establishing a comprehensive health, safety, and environmental program for its activities and facilities. The Department has established a framework for managing its facilities through the promulgation of regulations and the

issuance of DOE Orders. In general, DOE Orders set forth policies, programs, and procedures for implementing policies. Many DOE Orders contain specific requirements in the areas of radiation protection, nuclear safety and safeguards, and security of nuclear material. Table 11-2 lists DOE Orders potentially relevant to the Civilian Radioactive Waste Management Program.

**Table 11-2.** DOE Orders potentially relevant to the Civilian Radioactive Waste Management Program (page 1 of 2).

Order	Subject	Description
151.1	Comprehensive Emergency Management System	Establishes requirements for emergency planning, preparedness, response, recovery, and readiness assurance activities and describes the approach for effectively integrating these activities under a comprehensive, all-emergency concept.
231.1	Environment, Safety and Health Reporting	Establishes the requirements and procedures for reporting information with environmental protection, safety, or health protection significance for DOE operations.
232.1	Occurrence Reporting and Processing of Operations Information	Establishes the requirements for reporting and processing occurrences related to safety, health, security, property, operations, and the environment, up to and including emergencies.
250.1	Civilian Radioactive Waste Management Facilities – Exemption from Departmental Directives	Establishes the relationship between DOE directives and Nuclear Regulatory Commission regulations for the Yucca Mountain Project.
420.1A	Facility Safety	Establishes facility safety requirements related to nuclear safety design, criticality safety, fire protection, and natural phenomena hazards mitigation.
425.1	Facility Startup and Restart	Establishes procedures to be followed when a facility is taken from a nonoperational to an operational state.
430.1	Life Cycle Asset Management	Establishes procedures to be followed in all phases of the management of DOE facilities.
440.1A	Worker Protection Management for DOE Federal and Contractor Employees	Establishes a comprehensive worker protection program that ensures that DOE and its contractor employees have an effective worker protection program that will reduce or prevent injuries, illnesses, and accidental losses by providing DOE, Federal, and contractor workers with a safe and healthful workplace.
451.1A	National Environmental Policy Act Compliance Program	Establishes DOE internal requirements and responsibilities for implementing the National Environmental Policy Act of 1969, as amended, the Council on Environmental Quality regulations implementing the procedural provisions of the Act (40 CFR Part 1500 <i>et seq.</i> ), and the DOE procedures that implement it (10 CFR Part 1021).
460.1A	Packaging and Transportation Safety	Establishes requirements and assigns responsibilities for the safe transport of hazardous materials, hazardous substances, hazardous wastes, and radioactive materials.
1300.2A	Department of Energy Technical Standards Program	Establishes policy, assigns responsibility, and provides requirements for development and application of technical standards in DOE facilities, programs, and projects; provides for participation in non-Government standards bodies and for establishment of a DOE Technical Standards Program; and assigns responsibility for the management of the program.
1360.2B	Unclassified Computer Security Program	Establishes requirements, policies, responsibilities, and procedures for developing, implementing, and sustaining a DOE unclassified computer security program.

**Table 11-2.** DOE Orders potentially relevant to the Civilian Radioactive Waste Management Program (page 2 of 2).

Order	Subject	Description
3790.1B	Federal Employee Occupational Safety and Health Program	Establishes requirements and procedures to ensure that occupational safety and health standards prescribed pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, and the DOE Organization Act of 1977 provide occupational safety and health protection for DOE contractor employees in Government-owned contractor-operated facilities.
5400.1	General Environmental Protection Program	Establishes environmental protection program requirements, authorities, and responsibilities for DOE operations to ensure compliance with applicable Federal, state, and local environmental protection laws and regulations and with internal DOE policies.
5400.5	Radiation Protection of the Public and the Environment	Establishes standards and requirements for operation of DOE and DOE contractors with respect to protection of members of the public and the environment against undue risk from radiation.
5480.19	Conduct of Operations Requirements for DOE Facilities	Provides requirements and guidelines for DOE elements to use in developing directives, plans, and procedures related to the conduct of operations at DOE facilities.
5484.1	Environmental Protection, Safety, and Health Protection Information Reporting Requirements	Establishes the requirements and procedures for the investigation of occurrences having environmental protection, safety, or health protection significance, and for efficient environmental monitoring of DOE operations.
5610.14	Transportation Safeguards System Program Operations	Establishes DOE policies for and implementation of the management and operation of the Transportation Safeguards System program.
5632.1C	Protection and Control of Safeguards and Security Interests	Establishes policy, responsibilities, and authorities for the protection and control of safeguards and security interests (for example, special nuclear material, vital equipment, classified matter, property, facilities, and unclassified irradiated reactor fuel in transit).
5633.3B	Control and Accountability of Nuclear Materials	Prescribes the minimum DOE requirements and procedures for control and accountability of nuclear materials at DOE-owned and -leased facilities and DOE-owned nuclear materials at facilities that are exempt from licensing by the Nuclear Regulatory Commission. Would apply to materials destined for a repository before the materials reached the repository.
5820.2A	Radioactive Waste Management	Establishes policies and guidelines by which DOE manages radioactive waste, waste byproducts, and radioactively contaminated surplus facilities.

The Nuclear Regulatory Commission is authorized to license the proposed Yucca Mountain repository. Some DOE Orders overlap or duplicate Nuclear Regulatory Commission repository licensing regulations in whole or in part. Recognizing this, the Department issued DOE HQ Order 250.1, *Civilian Radioactive Waste Management Facilities – Exemption from Departmental Directives*. This Order exempts geologic repository design, construction, operation, and decommissioning from compliance with the provisions of DOE Orders that overlap or duplicate Commission requirements related to radiation protection, nuclear safety (including quality assurance), and safeguard and security of nuclear material. The exemption would apply only to portions of a repository project for which DOE sought a Nuclear Regulatory Commission license. DOE Orders would continue to establish requirements for other activities associated with a repository that fall outside the scope of this exemption, for example in the area of computer security (Order 1360.28).

Through DOE Order 440.1A, *Worker Protection Management for DOE Federal and Contractor Employees*, the Department has prescribed the Occupational Safety and Health Act standards that contractors are to meet in their work at government-owned, contractor-operated facilities.

A monitored geologic repository at Yucca Mountain would be a nonreactor nuclear facility. DOE Orders 5480.21, *Unreviewed Safety Questions*, 5480.22, *Technical Safety Requirements*, and 5480.23, *Nuclear Safety Analysis Reports*, ordinarily apply to nonreactor nuclear facilities. Because DOE Order 250.1 gives precedence to Nuclear Regulatory Commission rules, DOE Orders 5480.21, 5480.22, and 5480.23, for example, probably would not apply to the repository.

## 11.4 Potentially Applicable Federal Regulations

Sections 11.2.1 through 11.2.3 identify major laws, regulations, and DOE Orders potentially applicable to the construction, operation and monitoring, and closure of a monitored geologic repository. Table 11-3 lists other potentially applicable regulations and orders.

**Table 11-3.** Potentially applicable Federal regulations, orders, standards, and memoranda (page 1 of 3).

Document Number	Title <sup>a</sup>
<i>Code of Federal Regulations</i>	
10 CFR 2	Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders
10 CFR 19	Notices, Instructions and Reports to Workers: Inspection and Investigations
10 CFR 40	Domestic Licensing of Source Material
10 CFR 51	Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions
10 CFR 60	Licensing Requirements for Geologic Repository
10 CFR 61	Licensing Requirements for Land Disposal of Radioactive Waste
10 CFR 72	Licensing Requirements for the Independent Storage of Spent Nuclear Fuel and High-Level Waste
10 CFR 73	Physical Protection of Plants and Materials
10 CFR 75	Safeguards on Nuclear Material-Implementation of US/IAEA Agreement
10 CFR 100	Reactor Site Criteria
10 CFR 707	Workplace Substance Abuse Programs at DOE Sites
10 CFR 830	Nuclear Safety Management
10 CFR 835	Occupational Radiation Protection
10 CFR 960	General Guidelines for the Recommendation of Sites for Nuclear Waste Repositories
10 CFR 1022	Compliance with Floodplain/Wetlands Environmental Review Requirements
29 CFR 1926	Safety and Health Regulations for Construction
29 CFR 1960	Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters
30 CFR 57	Safety and Health Standards, Underground Metal and Nonmetal Mines
33 CFR 323	Permits for Discharges of Dredged or Fill Material into Waters of the United States
33 CFR Chapter I	Coast Guard Department of Transportation (Parts 1-199)
36 CFR 296	Permits to Proceed (Objects of Antiquity)
36 CFR 800	Protection of Historic and Cultural Properties
40 CFR 50	National Primary and Secondary Ambient Air Quality Standards
40 CFR 60	Standards of Performance for New Stationary Sources
40 CFR 61	National Emission Standards for Hazardous Air Pollutants
40 CFR 63	National Emission Standards for Hazardous Air Pollutants for Source Categories
40 CFR 122	EPA Administered Permit Programs: The National Pollutant Discharge Elimination System
40 CFR 125	Criteria and Standards for the National Pollutant Discharge Elimination System
40 CFR 133	Secondary Treatment Regulation
40 CFR 136	Guidelines Establishing Test Procedures for the Analysis of Pollutants

**Table 11-3.** Potentially applicable Federal regulations, orders, standards, and memoranda (page 2 of 3).

Document Number	Title <sup>a</sup>
<i>Code of Federal Regulations (continued)</i>	
40 CFR 141	National Primary Drinking Water Regulations
40 CFR 142	National Primary Drinking Water Regulations Implementation
40 CFR 143	National Secondary Drinking Water Regulations
40 CFR 246	Source Separation for Materials Recovery Guidelines
40 CFR 257	Criteria for Classification of Solid Waste Disposal Facilities and Practices
40 CFR 260	Hazardous Waste Management System: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 264	Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 265	Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 268	Land Disposal Restrictions
40 CFR 280	Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks
40 CFR 503	Standards for the Use or Disposal of Sewage Sludge
40 CFR 747	Metalworking Fluids
40 CFR 761	Polychlorinated Biphenyls Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
40 CFR 1500	Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act
41 CFR 101	Federal Property Management Regulations
43 CFR 3 and 7	Preservation of Antiquities, Protection of Archaeological Resources
43 CFR 2300	Land Withdrawal
43 CFR 3600	Free Use Permit
43 CFR 4100	Right-of-Way Reservation
49 CFR 171	General Information, Regulations and Definitions
49 CFR 172	Hazardous Materials Table, Special Provisions, Hazardous Materials Communications Requirements and Emergency Response Information Requirements
49 CFR 173	Shippers – General Requirements for Shipments and Packagings
49 CFR 174	Carriage by Rail
49 CFR 176	Carriage by Vessel
49 CFR 177	Carriage by Public Highway
49 CFR 178	Shipping Container Specifications
49 CFR 180	Continuing Qualification and Maintenance of Packagings
49 CFR 392	Driving of Motor Vehicles
49 CFR 393	Parts and Accessories Necessary for Safe Operation
50 CFR 17	Endangered and Threatened Wildlife and Plants
50 CFR 400	Endangered Species Act
50 CFR 402	Interagency Cooperation – Endangered Species Act of 1973, as Amended
<i>Executive Orders</i>	
Executive Order 11514	National Environmental Policy Act, Protection and Enhancement of Environmental Quality
Executive Order 11593	National Historic Preservation
Executive Order 11988	Floodplain Management
Executive Order 11990	Protection of Wetlands
Executive Order 12856	Right to Know Laws and Pollution Prevention Requirements
Executive Order 12898	Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
Executive Order 13007	Indian Sacred Sites
Executive Order 13084	Consultation and Coordination with Indian Tribal Governments
Executive Order 13112	Invasive Species

**Table 11-3.** Potentially applicable Federal regulations, orders, standards, and memoranda (page 3 of 3).

Document Number	Title <sup>a</sup>
<i>Other documents, orders, and directives</i>	
AAR Rule 91	1993 Field Manual of Association of American Railroads Interchange Rules (AAR Interchange Rule 91, Weight Limitations)
BLM Manual, Sec. 9113	Bureau of Land Management Manual, Road Standards
DOE Order 430.1	Life Cycle Asset Management
DOE Order 3790.1	Federal Employees Occupational Safety and Health Program
DOE Order 5480.4	Environmental Protection, Safety, and Health Protection Standards
DOE Order 5632.1	Protection Program Operation
DOE/EA-0179	Environmental Assessment Waste Form Selection for Savannah River HLW
DOE/EH-0256T	DOE Radiological Control Manual
DOE/RW-0184	Characteristics of Potential Repository Wastes, Volumes 1-4
DOE/RW-0194P	Records Management Policies and Requirements
DOE/RW-0328P	Acceptance Priority Ranking
DOE/RW-0333P	OCRWM Quality Assurance Requirements and Description
DOE/RW-0457	1995 Acceptance Priority Ranking and Annual Capacity Report
DOE-STD-1020	Natural Phenomena Hazards Design and Evaluation Criteria for Department of Energy Facilities
DOE-STD-1021	Natural Phenomena Hazards Performance Categorization Criteria for Structures, Systems and Components
DOE-STD-1022	Natural Phenomena Hazards Site Characterization Criteria
DOE-STD-1023	Natural Phenomena Hazards Assessment Criteria (Draft)
DOE-STD-1024	Guidelines for Use of Probabilistic Seismic Hazard Curves at Department of Energy Sites
DOE-STD-1062	Ergonomic and Human Factors Design Criteria <sup>b</sup>
Fed-STD-795	Uniform Federal Accessibility Standards
GSA-FSS-W-A-450/1-17	General Service Administration Interim Federal Specification
MOA DP/RW	Policy for Shipping Defense High-Level Waste (DHLW) to a Civilian Radioactive Waste Repository
MOA RW/NS	Nuclear Safety Requirement
MOU DOE/DOL	Mining Safety
NRC RG 1.13	Spent Fuel Storage Facility Design Basis
NRC RG 1.76	Design Basis Tornado for Nuclear Power Plants
NRC RG 8.8	Information Relevant to Ensuring That Occupational Radiation Exposure at Nuclear Power Stations Will Be As Low As Is Reasonably Achievable
NRC RG 8.10	Operating Philosophy for Maintaining Occupational Radiation Exposure As Low As Is Reasonably Achievable
NUREG 0700	Guidelines for Control Room Design Reviews
NUREG 0856	Final Technical Position on Documentation of Computer Codes for High-Level Waste Management
Presidential Memo (04/30/85)	Dispose of Defense Waste in a Commercial Repository

- a. IAEA = International Atomic Energy Agency; EPA = Environmental Protection Agency; HLW = high-level radioactive waste; OCRWM = Office of Civilian Radioactive Waste Management.
- b. This standard is complete, but has not been formally published at this time. However, it is included here as a source because it consists of a compilation of requirements from accepted sources. Those sources include standards from the Code of Federal Regulations, Nuclear Regulatory Commission regulations, and military, American National Standards Institute, National Aeronautics and Space Administration, and Electric Power Research Institute standards, as well as recognized design handbooks and guides that govern standard engineering practice.